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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,585	10/17/2001	Thomas W. McClendon	10012393-1	7563

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

WANG, ALBERT C

ART UNIT	PAPER NUMBER
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2115

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/982,585	Applicant(s) MCCLENDON ET AL.	
	Examiner Albert Wang	Art Unit 2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 9-16, 21-31 and 39-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 17-20, and 32-38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Original claims 1-47 are presented for examination.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8, 17-20, and 32-38 drawn to adjusting clock frequency in response to a measured temperature, classified in class 713, subclass 300.
 - II. Claims 24-27 drawn to adjusting clock frequency in response to comparison a previously read temperature, classified in class 713, subclass 300.
 - III. Claims 9-15, 21-23, 28-31, and 39-44 drawn to adjusting clock frequency in response to a power supply failure, classified in class 713, subclass 322.
 - IV. Claims 16 and 47 drawn to adjusting power supply voltage in response to a power supply failure, classified in class 713, subclass 340.
 - V. Claims 45 and 46 drawn to adjusting clock frequency in response to a fan failure, classified in class 714, subclass 2.

The inventions are distinct, each from the other because of the following reasons:

Invention groups I, II, III, IV, and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, group I has separate utility such as passive cooling in view of temperature thresholds, group II has separate utility such as passive cooling to maintain a fixed, desired temperature, group III has separate utility such as adjusting system clock frequency to compensate for diminished power supply capacity, group IV has separate

Art Unit: 2115

utility such as adjusting system voltage to compensate for diminished power supply capacity, and group V has separate utility such as adapting to active cooling failure. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for each group is not required for the other groups, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Les Gehman (Reg. No. 45,624) on November 30, 2004 a provisional election was made without traverse to prosecute the invention of group I, claims 1-8, 17-20, and 32-38. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-16, 21-31, and 39-47 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6, 8, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 8 recite the limitation "said clock". There is insufficient antecedent basis for this limitation in the claims.

Claim 17 recites the limitation "said clock frequency". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 8, 17-20, 32-35, and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Browning et al., U.S. Patent No. 6,415,388 ("Browning").

As per claim 1, Browning discloses an electronic device comprising:

a temperature sensor (fig. 2, temperature sensor 150); and

a clock controller electrically coupled with said temperature sensor (fig. 2, control logic 140), wherein said clock controller receives a temperature signal from said temperature sensor and produces clock signals of varying frequencies in response to said temperature signal (col. 4, lines 30-36).

As per claim 2, Browning discloses said clock signals increase in frequency in response to a decrease in said temperature signal (col. 5, lines 11-21), and said clock signals decrease in frequency in response to an increase in said temperature signal (col. 4, lines 46-51).

As per claim 3, Browning discloses said electronic device is a computer (col. 3, lines 30-32).

As per claim 4, Browning discloses said electronic device is an integrated circuit (fig. 4, microprocessor 110; col. 5, lines 41-50).

As per claim 8, Browning discloses said clock automatically changes frequencies during normal operation of said electronic device (fig. 5; col. 5, lines 52-63).

As per claim 17, Browning discloses a method for adjusting the operation of an electronic device comprising the steps of:

- a) reading a temperature value of said electronic device (fig. 4, temperature sensor 150 for microprocessor 110; fig. 5, step 360 – monitor temperature); and
- b) automatically setting a clock frequency in response to said temperature value (fig. 5, step 280 vary clock frequency; col. 5, lines 38-40, closed loop feedback, and lines 52-63).

As per claim 18, Browning discloses said clock frequency is automatically set to a first frequency in response to a first temperature value, and said clock frequency is automatically set to a second frequency in response to a second temperature value (col. 6, lines 19-23 & 35-43).

As per claim 19, Browning discloses said first frequency is less than said second frequency when said first temperature is greater than said second temperature (col. 6, lines 19-23 & 35-43).

As per claim 20, Browning discloses said first frequency is greater than said second frequency when said first temperature is less than said second temperature (col. 6, lines 19-23 & 35-43).

Art Unit: 2115

As per claim 32, Browning discloses an electronic device comprising:

means for measuring a temperature of said electronic device (fig. 2, temperature sensor 150);

means for adjusting a clock frequency in response to said temperature of said electronic device (fig. 2, control logic 140; col. 4, lines 30-36).

As per claim 33, Browning discloses said means for adjusting a clock frequency increases said clock frequency in response to a decrease in said temperature, and said means for adjusting a clock frequency decreases said clock frequency in response to an increase in said temperature (col. 6, lines 19-23 & 35-43).

As per claim 34, Browning discloses said electronic device is a computer (col. 3, lines 30-32).

As per claim 35, Browning discloses said electronic device is an integrated circuit (fig. 4, microprocessor 110; col. 5, lines 41-50).

As per claim 38, Browning discloses said means for measuring a temperature and said means for adjusting a clock frequency automatically operate during normal operation of said electronic device (col. 4, lines 30-43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2115

7. Claims 5-7, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Browning as applied to claims 1, 4, 32, and 35 above, and further in view of Herbert, U.S. Patent No. 5,798,667.

As per claim 5, Browning does not expressly teach said temperature sensor is a thermal diode. Herbert teaches varying the clock frequency of an integrated circuit based on readings from a temperature sensor (claim 1). Herbert further teaches that the temperature sensor may be a thermal diode (fig. 1, diode D1; col. 3, lines 53-60). At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply Herbert's thermal diode as the temperature sensor in Browning's electronic device. The selection of a thermal diode over some other type of temperature sensor would have been a matter of design choice (Herbert, col. 3, lines 53-60).

As per claim 6, Herbert teaches said clock controller includes a phase-locked loop (col. 6, lines 6-9; claim 1).

As per claim 7, Herbert teaches said phase-locked loop is digital (fig. 7; col. 7, lines 20-27).

As per claim 36, Herbert teaches said means for measuring a temperature is a thermal diode (fig. 1, diode D1; col. 3, lines 53-60).

As per claim 37, Herbert teaches said means for adjusting a clock frequency includes a phase-locked loop (fig. 7; col. 7, lines 20-27).

Conclusion

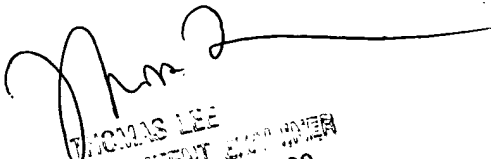
Art Unit: 2115

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Wang whose telephone number is 571-272-3669. The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

aw
November 30, 2004


THOMAS LEE
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 2100